AMENDMENTS TO THE CLAIMS

1 - 25. **(Canceled)**

26. **(Currently Amended):** A method of automatically adjusting a level of trace data collection, comprising:

monitoring program activity occuring during execution of a computer program;

collecting trace data representative of the program activity;

writing, after the collecting the trace data reaches a predetermined point, the trace data to one or more trace records in a trace history buffer located in a volatile memory, each of the one or more trace records including a trace level associated therewith, the trace level indicating a severity of the program activity, the trace history buffer being a circular buffer such that oldest trace records are overwritten by newest trace records in a cyclical manner if the trace history buffer becomes full;

~~storing the one or more trace records in a trace history buffer located in volatile memory, such that trace records are written to the trace history buffer until the trace history buffer is full, and older trace records are overwritten by newer trace records when the trace history buffer is full, the trace history buffer thereby containing a history of recent trace records;~~

comparing, for each trace record stored in the trace history buffer, the trace level to a predetermined threshold value, and writing the trace record to a log file located in persistent storage as a logged trace record if the trace level is greater than the predetermined threshold value;

writing each remaining trace record stored in the trace history buffer to the log file if (i) at least one of the trace records is written to the log file as the logged trace record and (ii) a trap value specific to a process from a plurality of processes in the program activity is detected within the logged trace record;

writing the trace history buffer to the log file if the trap value specific to the program activity fails to be detected, and if the trace level associated with the logged trace record is subsequently determined to be greater than a predetermined trace history level;

upon writing the trace history buffer to the log file, resizing the trace history buffer if a quantity of the one or more trace records in the trace history buffer exceeds a predetermined number of trace records; and

resetting and clearing the trace history buffer such that storing of trace records may continue.

27. **(Previously Presented):** The method of claim 26 wherein the trace level is a numeric value.

28. **(Previously Presented):** The method of claim 26 wherein the trace history buffer is of a configurable size.

29. **(Previously Presented):** The method of claim 26 wherein the predetermined threshold value is configurable.

30. **(Previously Presented):** The method of claim 26 wherein the predetermined trace history level is configurable.

31. **(Previously Presented):** The method of claim 26 wherein the predetermined trace history level indicates a level of severity that causes the trace history buffer to be written to the log file.

32. **(Previously Presented):** The method of claim 26 wherein the trap value comprises a condition code unique to an event occurring within the program.

33. **(Previously Presented):** The method of claim 26 wherein the trap value comprises a trigger received from a hardware signal.

34. **(Previously Presented):** The method of claim 26 wherein resizing the trace history buffer further comprises clearing the trace history buffer.

35. **(Previously Presented):** The method of claim 26 wherein the log file and the trace history buffer reside on different computer systems that communicate over a network.

36-44. **(Canceled)**